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ABSTRACT

A review is presented of 84 research studies on the efficacy of homework in improving academic performance. The studies were conducted between 1904 and 1984. Findings of the studies are presented in tables categorized by school levels: elementary, high school, and college. Some implications for teacher education programs are briefly discussed. (JD)

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HOMEWORK

Some Implications for Teacher Education Programs

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Definition of terms

Homework was defined as the taking of books and assignments home after school for the purpose of home study. Elementary school included kindergarten through eighth grade. Secondary school included ninth through twelfth grade. College included courses at the undergraduate and graduate levels in junior colleges, four year colleges, and universities.

Review of the literature

Any citations not specifically found in the selected references are located in Foyle & Bailey (1984). Homework was a topic of debate as early as 1842 in England (Gordon, 1980). In 1892, an early edition of the Cyclopaedia of Education indicated that children under nine years of age could not prepare new work at home. Thus, they should not be given any home-lessons. Homework experimental research was cited in Germany as early as 1904 (Simmons, 1921). In 1913 Ladies' Home Journal conducted a survey of administrators, medical doctors, and parents about the effects of homework on children. The magazine stated that homework should cease in the public schools ("The first step", 1913). The homework debate has ebbed and flowed ever since that time.

Goldstein (1960) examined 17 experimental research reports from the thirty years preceding 1959. Goldstein concluded that results were mixed due to limited and inadequate studies, but that experimental data supported achievement gains due to homework. Leonard (1965) found that planned, systematic, instructional homework procedures produced positive achievement results. Friesen (1979) reviewed 24 homework-versus-no-homework studies that were conducted between 1923 and 1976 and found no clear-cut endorsement for either homework or no homework. Coulter (1980) examined the homework literature and concluded that certain kinds of regularly assigned homework affected school achievement, however, "fifty years of research on homework have yielded little information that might guide teachers or administrators in setting policy or in adopting strategies that will maximize pupil participation and achievement" (p. 26). Knorr (1981) concluded that the question of the relationship of homework to achievement remained unresolved. Rickards (1982) stated "I am reasonably sure that homework of the right kind given under the right set of conditions positively influences academic achievement. What is needed is more well-designed and well-executed experimental research aimed at systematically examining different kinds of homework under different sorts of conditions" (p. 833). Strother (1984) summarized homework findings by stating that "research does not tell us what kind of homework works best for what kind of learner. We do have some insights into the kinds of homework that teachers can assign, however" (p. 425). Foyle & Bailey (1985) developed research-based homework guidelines. They, also, elaborated four types of homework categorized by purpose: preparation, practice, extension, creative.

Experiments in total

There were 84 experiments that were conducted between 1904 and 1984 and that dealt with some aspect of homework (Foyle & Bailey, 1984). The period of time after the launching of the first artificial earth satellite (Russia's Sputnik I in October 1957) seems to be a watershed for homework. Prior to Sputnik there were 18 homework experiments. After Sputnik there were 66 homework experiments. Homework experiments can be divided into three categories according to statistical findings: a significant difference in favor of homework, no significant difference between homework and another method, and a significant difference in favor of a method other than homework. Also, the experiments can be divided into educational levels: elementary school, secondary school, and college.

Examining all homework experiments as one group, there appears to be mixed results. Thirty-four experiments found a significant difference in favor of homework over other methods of learning. Six experiments found a significant difference in favor of other methods of learning than homework. Forty-eight experiments found that homework and other methods of learning produced similar results in student achievement. The number of results (88) is greater than the actual number of experiments (84) due to multiple conclusions in one experiment and multiple grade levels in another experiment. Two experiments contained both elementary school and secondary school grade levels. One high school experiment found mixed results and reported in three subject areas. The primary subject area for homework experimentation was mathematics (Austin, 1979). Since 1957, fifty-nine out of sixty-five cited homework experiments were conducted in mathematics, mathematics-related subjects, and shorthand. The results of these 84 experiments are found in Table 1.

TABLE 1

Homework Experiments

By level, occurrence and results

Results	Elementary		High School		College	
	1904-57	1958-84	1904-57	1958-84	1904-57	1958-84
Homework	4	13	3	6	0	8
No sig. diff.	3	9	4	7	0	25
Other method	4	0	2	0	0	0
Total	11	22	9	13	0	33

Experiments by level

When homework experiments are examined by grade levels, the results are clearer. At the elementary school level and secondary school level, homework produces student achievement. At the college level no difference is found between homework and other methods. After a review of the literature, the following implications or recommendations for each level can be made. A table is included for each level: elementary, secondary, and college.

Elementary school level

1. Homework produced higher student achievement than no homework.
2. Required homework produced higher student achievement than voluntary or encouraged homework.
3. Individualized homework produced higher student achievement.
4. Feedback and reinforcement produced higher student achievement.

Table 2

Elementary School Homework Experiments

By grade level and number of experiments

Grade	Number
K	0
1	0
2	0
3	3
4	7
5	11
6	15
7	10
8	9
Total	55

Secondary school level

1. Assign homework.
2. Provide time in class to do homework.
3. Make a portion of homework assignments voluntary and nonwritten.
4. Provide some forms of reinforcement to students.
5. Reduce teacher time spent on homework.
6. Provide different types of homework for variety.

Table 3

Secondary School Homework Experiments

By subject and number of experiments

Subject	Number
Mathematics	14
Social Studies	6
English	1
Latin	1
Total	22

One experiment (Breed, 1919) was conducted in multiple subject areas hence the number of actual experiments (20) is exceeded by the number of subject areas (22) in which the experiments were conducted.

College level

1. Homework experiments should no longer be conducted in subject areas that deal with practice homework. Generally, other methods work as well as traditional homework in these areas.

2. Homework experiments need to be conducted in subject areas that deal with preparation homework, such as English, history, social sciences, and other reading type courses.

3. Homework experiments should be conducted specifically using extension homework and creativity homework. (Lee & Pruitt, 1979)

4. The personality and teaching style of the instructor may be more important than the method of instruction and various aspects of homework (Mason, 1967). Homework experiments should be conducted that relate homework to those factors.

Table 4

College Homework Experiments

By subject and number of experiments

Subject	Number
Mathematics	24
Mathematics-related	3
Shorthand	5
Spanish	1
Total	33

Implications for Teacher Education Programs

1. At the college level, homework assignments may or may not be used in teacher education programs. In terms of student achievement, other methods appear to be equal to the assignment of homework.

2. Current research findings on student achievement and homework should be provided to students in teacher education programs.

3. Since homework increases student achievement at the elementary school and secondary school levels, the teaching of homework as a methodology should be included in teacher education programs.

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